



Practice Masters Level B

6.3 Logarithmic Functions

Write each equation in logarithmic form.

1. $15^{-2} = \frac{1}{225}$ _____

2. $16^{\frac{-1}{4}} = \frac{1}{2}$ _____

3. $\left(\frac{1}{3}\right)^{-4} = 81$ _____

4. $\left(\frac{1}{4}\right)^3 = \frac{1}{64}$ _____

5. $\left(\frac{1}{5}\right)^{-3} = 125$ _____

6. $1000^{\frac{-1}{3}} = \frac{1}{10}$ _____

Write each equation in exponential form.

7. $\log_{216} 6 = \frac{1}{3}$

8. $\log_{10,000} 10 = \frac{1}{4}$

9. $\log_4 \frac{1}{64} = -3$

10. $\log_4 \frac{1}{256} = -4$

11. $\log_{10} 0.01 = -2$

12. $\log_7 1 = 0$

Solve each equation for x . Round your answers to the nearest hundredth.

13. $10^x = 20$

14. $10^x = 51$

15. $10^x = 0.4$

16. $10^x = 1.5$

17. $10^x = 0.0075$

18. $10^x = 5075$

Find the value of n in each equation.

19. $-3 = \log_2 n$

20. $-4 = \log_5 n$

21. $6 = \log_n 64$

22. $-3 = \log_n \frac{1}{125}$

23. $-3 = \log_n 0.001$

24. $7 = \log_n 10,000,000$
